IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	Loibl et al.
Serial No.:	10/731,264
Title:	**Rapid Fluid Cooling and Heating Device and Method**
Filing Date:	December 9, 2003
Examiner:	M. Drake
Group:	3744
Atty Docket No.:	6011.005.200

PATENT APPLICATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF GREGORY H. LOIBL, 37 CFR §1.132

Sir:

I, Gregory H. Loibl, declare as follows:

1. I am the first-named inventor for the above-captioned US patent application. I am also the same Gregory H. Loibl as named on U.S. Patent No. 5,505,054 ("the '054 patent") and U.S. Patent No. 6,662,574, the parent to the instant application. I received my Bachelor of Engineering degree from the Cooper Union for the Advancement of Science and Art in 1992 and my Master of Engineering degree from Cooper Union in 1994. I have been working in the field of rapid fluid cooling and heating for over 12 years. I have reviewed the June 2, 2004 Office Action received for the instant application. I make the instant Declaration in support of the patentability of the claimed invention.

2. There are many advantages to making the housing of the invention part of a household refrigerator, none of which are taught or suggested by my original '054 patent covering this general type of rapid chilling method. I filed the patent application for the '054 patent in 1994 but did not contemplate incorporating the device and method into a household refrigerator until much later; the provisional patent application from which the instant application claims priority was filed in 2001. In overview, the main advantages of making the housing of a rapid chilling device part of a household refrigerator are: 1) it eliminates the need to add ice manually to fuel

the process; 2) it utilizes an existing compressor already present in nearly every household; 3) it creates a more energy efficient way to chill beverages than the original process; and 4) it represents a convenient location that occupies no additional space in a home. Further, it has been deemed desirable by major refrigeration manufacturers.

3. **Eliminates External Ice** – For the prior patented stand-alone model of the '054 patent, the user is required to add ice for each beverage chilled. The invention uses the existing cooling capability of the refrigerator and eliminates the need for the user to monitor ice consumption. Any ice needed for the process is already made by the refrigerator and is ready for use in the rapid cooling process. Further, with the stand-alone model, the user needs to remove water frequently from the reservoir as the ice melts and more ice is added. By contrast, when the inventive process is integrated with a household refrigerator, the reservoir can be maintained at a much cooler temperature, and much less water need be used. The instant invention is more convenient and saves the end user time.

4. **Utilizes an existing appliance** – A refrigerator is a necessity in most households. The benefits of rapid beverage chilling are gained without adding an additional appliance, thereby conserving countertop space. A compressor might be added to the original stand-alone appliance of the '054 patent, however that would drive up the cost of the appliance prohibitively. By contrast, the incremental cost of incorporating the process into a household refrigerator is anticipated to be less than that of even purchasing a separate stand-alone appliance.

5. **Possesses greater energy efficiency compared to the stand-alone** – The stand-alone appliance, which requires the user to add ice and water, uses more energy than by chilling a beverage in a system designed for a refrigerator. For the stand-alone unit, the user adds ice and water. The ice requires a certain amount of energy to be produced in a freezer. Some of this energy is wasted when water is added to the reservoir. Energy is also wasted from heat entering the system from the ambient air, which occurs every time a beverage is placed in or removed from the stand-alone device. Furthermore, energy is wasted when the user dumps the excess ice and water from the machine after the consumer is finished with it. When using the instant claimed in-refrigerator model, only the ice needed for the process is used. Less ice is wasted, and therefore less energy is consumed creating the reduced quantity of ice. Also, the reservoir in the household refrigerator model is typically not exposed to ambient air.

6. **Possesses great convenience.** The refrigerator represents a convenient location to incorporate the inventive process. Instead of taking the stand-alone device out of the closet or pantry when needed and then having to plug in the unit, the refrigerator model is ready to go at all times. This also frees up countertop space for other devices or for food preparation.

7. To date, my company, Revolutionary Cooling Systems (RCS), has had communication

with several major household refrigerator manufacturers, all of whom have expressed interest in pursuing the technology. One of the largest (whom I cannot identify here because of a confidentiality agreement) has supported the project with donations of over $5,000 worth of equipment to date.

8. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 USC § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Executed in Hyde Park, NY

Dated: October 29, 2004

Gregory Loibl

Gregory H. Loibl